

29 Harrison

D. med

1876

In

Inaugural Essay

on

Diet in convalescence

Dated March 9. 1879

For

The degree of Doctor of Medicine

In the

University of Pennsylvania

By

Benjamin J Harrison

of

Lawrenceville

Feb 26th 1878

Virginia

[Faint, illegible handwriting, likely bleed-through from the reverse side of the page.]

[Faint, illegible handwriting on the right edge of the page, possibly from the adjacent page.]

It is often said, that, "to eat little and often, is a golden rule in convalescence" we shall now examine this rule. It is a fact universally admitted, that regularity in our habits of life, contribute much to the preservation of health, and not among the least important of these, is regularity in the periods of taking our food — for all know, what feelings are excited if we miss of our accustomed meals, even for a few hours. These are morbid feelings, and form the first link in the chain of diseases. It is true that the regularity of our habits are disturbed by disease, yet not in so great a degree as to eradicate that tendency which the system has to be influenced by its accustomed habits; and suppose this tendency is in a measure annihilated is it not evident that the sooner we can restore it to its former mode of action the better? In this consistently the removal of disease, for until the former or accustomed mode of action is restored there is disease. Whence arises the great appetite in convalescence? It would seem to be the organs of nutrition demanding the materials of nutrition from the stomach to supply the great loss of substance

which
suffly
appetite
the
suffly
stomach
the q
is bet
want
want
howe
suffly
It w
of the
suffly
ten an
that
know
state
but

which the body has undergone, the stomach is unable to supply this demand hence the danger of satisfying the appetite in convalescence. Forster seems to think that this appetite, or hunger as he calls it, is rather an affection of the blood vessels, a desire to fill themselves than an affection of the stomach itself. But he had as well say that hunger in a state of health and rigor is an affection of the blood vessels for in both instances it is dependant on the same cause; the want of the materials of nutrition the primary seat of which want is in the blood vessels. yet it is referred to the stomach because that is the channel through which they must be supplied.

It will readily be admitted I suppose, that the powers of the stomach are weakened in a state of convalescence and consequently the food for convalescents should be of easy digestion and small in quantity. yet it does not follow from this that the stomach will digest this food any quicker in its present debilitated state than a full and heavy meal in a state of healthy rigor and strength. For example, if in full health when the stomach is possessed of all its strength and

certainly
 have all
 degrees
 than to
 so should
 stand
 time to
 when a
 that in
 degrees
 are we
 will a
 same be
 as are
 same in
 the same
 are not
 yet,
 be over
 that to

activity it can digest a pound of animal food in three hours does it not seem reasonable to suppose that if we deprive it of half its strength it will require double that time to digest that quantity?

In short, I contend that according as the powers of the stomach are weakened, so in proportion it requires more time to digest a given quantity of food, or that the time taken up in digestion is in direct ratio to the powers of that viscus; for instance, if a menstruum in any given time, dissolves a certain bulk of any substance, if in any manner we weaken the solvent powers of the menstruum it will acquire a proportionally longer time to dissolve the same bulk, but if we lessen the bulk in proportion as we lessen the solvent power of the menstruum we cause it to be dissolved in ~~in~~ the same time. This simile will be objected to, because I endeavor to illustrate an animal process by one which is perfectly chemical, yet from what we know of digestion it seems to be somewhat a solution—at least, it is generally admitted to be a chemico-animal process—but be it chemical

animal or mechanical, my simile is just, and my position firm.

Does this affect the golden rule "eat little and often in convalescence"? The former part viz "eat little" is good advice. Convalescents from acute diseases cannot be too careful not to overload the stomach. for generally, the more debilitated the system is, the more irritable it is, and of course, the circulation is more disturbed. The stomach partakes of the general irritability, and if overloaded with food never fails to produce a febrile state of the system. If food be taken in too great a quantity or of an indigestible quality the stomach in its weakened state is unable to digest it, it is therefore either rejected or passing through the intestinal canal there proves a source of irritation—hence *diarrhea dysenteria &c*.

The food taken may also be of too nutritious a quality from which may be formed too much chyle and thus overload the blood vessels which like the stomach are in a debilitated condition and unable to bear more than a certain quantity of blood. They seem to be something like

a sphere
 appears
 as a
 spotted
 with the
 but by
 with
 given
 will be
 present
 perhaps
 another
 The day
 dropped
 on by
 I then
 in some
 two or
 or one
 of it

a hydraulic machine which can bear a certain quantity of pressure but if we, in any manner, increase the quantity, we ruin the machine. Then we cannot be too careful to regulate the quality as well as quantity. we do not regulate the quantity of food by the waste in the system but by the power of the stomach to supply that waste without producing an unhealthy condition of the system at large.

All Physiologists agree that the gastric juice is the principal agent in digestion and that this juice is prepared of different qualities in different animals according to the nature of their food - for the stomach of the dog will digest bone with facility. some of the animals of teeth whilst they are little if at all acted on by the human stomach. It has been conjectured and I think with great plausibility, that each substance in coming in contact with the stomach produces a secretion adapted to its own solution and digestion. This opinion receives some support from the fact that simplicity in diet contributes so much to health and the

[Faint, illegible handwriting, likely bleed-through from the reverse side of the page.]

[Faint, illegible handwriting on the right edge of the page, possibly from the adjacent page.]

reverse is that a multifarious diet is such a prolific source of disease, besides we are totally unable with our present knowledge of chemistry to make any thing like a universal solvent or to know by what laws the same fluid acts in a different way, on different substances - for were we to draw our deductions from the known chemical laws we should say that the properties which would enable it to act on one substance would render it incapable of action on another of an entirely different nature; Indeed this would seem to be rendered more probable if what has been asserted be true that bile is occasionally forced into the stomach for the digestion of some articles and the last fact gains support from the circumstance of the biliary duct of some animals opening into the stomach. *Valsalva* relates the case of a man's having the ductus communis cholecysticus opening into the stomach and says that he was noted for the voraciousness of his appetite. It may be asked why if there are different solvents in the stomach does not bone &c call forth their own peculiar solvents? In answer I state that I do not contend

for an
different
feeding
which is
tender
is ab
Breg
to a f
tender
by ex
but as
a sh
the
that the
in a
different
- or
tender
a vol
reduced

7
for an indefinite number of solvents, but a number
differing as substances differ which are capable of af-
fordng nutriment to the system or that those substances
which are indigestible paralyze the secretions "below the
standard of vigorous reaction" and consequently produces
an abnormal state.

Though it is merely conjectural that the stomach secre-
tes a fluid peculiarly adapted to the digestion of par-
ticular substances, yet it has been satisfactorily proven
by experiment that this fluid is not always the same
but under what particular circumstances it undergoes
a change remains for future experiment to demonstrate.
~~The~~ this, however as it may, I hold it to be very evi-
dent that substances taken in at different times are
in ~~a~~ different states of assimilation and that these
different states are differently stimulant to the system
- or how could the stomach ever get rid of its con-
tents. When articles of food are first taken in they excite
a retentive action of the stomach, but when they are
reduced to the state of chyme they excite a different

8
action, that is they stimulate the stomach to the discharge
of its contents.

It is quite obvious how this affects the "golden rule" and
is in my opinion a weighty argument in favor of my position.
For I contend that if food be taken into the stomach before
the previous digestion is finished it will excite that or-
gan to irregular movements and according to what I have
said above the result of these actions is disease for
the stomach being already in a weak and irritable con-
dition is less able than in health to sustain a perpet-
ual excitement. Every organ requires rest. The heart itself
has its intervals of repose. Though short yet such is
its nature that they are sufficient for the return of
its excitability and energy. Dr Chapman thinks that
the stomach may be compared to a school boy who
is always in mischief unless employed.

I oppose, in toto, any conscience when I deviate from such
authority (as his name is almost as old to me as my
own), but must say that as sacred as his opinions
are to me on all matters relating to the ruin of

and
 It is
 of our
 right
 good
 say
 of the
 time
 sphere
 action
 has
 to the
 answer
 effort
 which
 were
 free
 which
 The
 part

9
medicine I must differ with him on this point—

It is, as I have before remarked, often told people of weak digestion "to eat little and oft". I again repeat that I am very far from thinking this always good advice and I have the authority of Dr Paris to say that although we may admit the expediency of that maxim. yet it is to be received with limitations. He says he no one who possesses any philosophical knowledge will adapt his practice to the notions of Sir William Temple who asserted what has been above stated and that we should not allow to the stomach any intervals of repose: to this I answer that the conversion of aliment into blood is effected by a series of elaborate processes, several of which are only perfectly performed during the quiescence of repose: it would seem, for instance, that the process of chylification is incompatible with that by which the first changes are produced in the stomach; this is evident from the well known fact, that our ^{process} appetite for food ceases when the former begins, although

the
to
unfor
that
and
the
they
one
them
a
our
and
has
3
some
which
the
long
grace
at

the repast should at the time have been insufficient to satisfy the cravings of nature; whereas in diseases of imperfect or depraved digestion as in Diabetes we find that the appetite for food is never satisfied by the most nutritive meals. It merits notice also, that whenever the stomach is called into action during the assimilating stages of digestion, the process will in weak persons be much disturbed if not entirely suspended.

These views have long since confirmed me in the opinion or propriety of treating mercurial affections in a manner very different from that which is generally pursued; and I may add (continued he) that the result has been satisfactory.

The plan to which I allude, he again continues, consist in enforcing longer intervals between each meal, which should be scanty, and in quantity short of what the appetite may require; in this way are the unrelenting absorbents, induced to perform their duties with greater promptitude and activity; but he admits that it is a practice on many accounts which is always

painful to ~~proceed~~ and generally impossible to enforce; but where circumstances had given him a complete and unreserved control the advantages have always been most decisive.

To this plan of treatment I can best refer, and in the commencement of the paragraph above quoted the author as far as I am able to judge confirms the opinion which I set out to support - for says he, as soon as dyspepsia commences, the appetite ceases, and I contend that a degree of appetite is a stimulant to ~~the~~ digestion, the truth of which assertion is, to us, every day manifested. It follows then as a natural corollary that we, by adopting "the golden rule" are disturbing the main principle which the system has, by a too frequent disturbance of its salutary functions.

Again the stomach and other digestive organs besides, suffering a disturbance of their functions require like the voluntary muscles their intervals of repose; and if regular and stated intervals are appropriated for taking food the appetite will by force of habit alone return at

Handwritten text in cursive script, likely a letter or journal entry. The text is written on aged, slightly yellowed paper. The handwriting is fluid and characteristic of the 18th or 19th century. The text is arranged in approximately 15 lines, with some lines being more densely written than others. The overall tone of the text appears to be formal or semi-formal.

Two
the
be a
ten
for
all
mak
fin
hah
the
gou
for
may
the
and
that
two
con
stan
in

these times and digestion will follow. on the other hand, if the stomach is kept constantly on tilt, there will never be a keen relish for food or an easy and powerful digestion. *See*

Jarvis says that "those who have weak stomachs will be able to digest more food, if they take their meals at regular hours because they have both the stimulant of the aliment they take and the periodical habit to assist their digestion."

Philip says that "it appears to him that with the generality of dyspeptics to take ~~three~~ meals in the twenty four hours is the best rule. In some cases he thinks it may be better to take four, and he expressly says that "the dyspeptic should eat nothing in the interval of these meals, for the contrary, there is no greater mistake than that he should be constantly taking something. This disturbs the natural process and entirely prevents the recurrence of appetite a certain degree of which is a wholesome stimulant to the stomach (Philip's Lectures p. 86)"

In some cases of urgent debility, however, he thinks there

is a necessity for taking food oftener—because says he, the stomach cannot bear enough food at one time for the due nourishment of the body if the intervals of meals be observed. But here he overlooked too far the important fact that in proportion as the system generally is debilitated so is the stomach and assimilating powers. Nevertheless, he has admitted, that we generally pay too little attention to this important circumstance.

My intention, which here is made quite manifest, I hold by this time, to be quite plain and my proposition thus far established which will lead me to consider the subject on a different bearing. and—

1st I conceive, that each action, of every organ, excites a previous ^{sensation} in that the sight of food prepares the mouth for its reception, that organ the stomach, and that again the small intestines &c and if we irritate the stomach continually by administering tit bits we, by interrupting its regular actions disturb the system at large.

2^d Valerius found that he was able to stop digestion by tying the 5th pair of nerves in a dog and on opening the dog found

the
constituted
of
some
and
the
and
stems
at a
F. at
the
the
of the
of
It is
food
as
supp
mate

the contents of the stomach to be in different stages of assimilation. The experiment was repeated by Haller who relates its effects on that organ (namely the stomach), as follows. "If the animal be allowed to live a considerable time after these nerves are divided in the neck and one preparation of each fold laid back, the food remaining in the stomach we have seen, if the animal has lately taken a full meal is always found undigested and nearly in the same state in all parts of the stomach, a circumstance which I was, at first, greatly at a loss to explain. This effect is uniform I never saw it otherwise. Yet we must conceive that at the time the animal last eats there is some food more or less digested in its stomach and some gastric juice to act on a part of that just received into it. The division of the 8th pair of nerves prevents the due formation of gastric juice &c."

It is evident he again continues "that the undigested food must at length come in contact with the stomach. As soon as this happens, the usual secretions not being supplied, to produce the proper change in the food an unnatural motion is excited; hence the efforts to vomit which

generally ensue in about half an hour or hour after the division of the nerve, marking the time when the stomach having sent the contents towards the pylorus which are already digested begins to feel the effects of undigested ^{food} coming in contact with its mucous surface?"

I now ask what must be the effects, reasoning a posteriori of the frequent administration of food? It seems to me evident, that its effect would be ~~similar~~ to those above described. That is, that they in the first place would according to the differences of substances employed and the times of their administration excite sensations totally different in their nature and effects.

But it is said that we can draw no analogy between a healthy and diseased process. I admit this in part to be true. My Physiological acquirements do not furnish me with many examples which might portray this part of my subject in an advantageous manner, but I do not hesitate to affirm but that my faith on this point "will grow with my growth and strengthen with my strength" as a cultivation of this branch of the science

will unfold to me some of the mysteries of its obscure operations, and then I think I shall be convinced of the indomitable powers of habit.

I recollect, some years since, of reading an instance of its powers which made considerable impression on my mind. A man employed many years as toller of a church-bell, in England became ~~sick~~ and was consequently confined but could, by his feelings, state the hours of worship to a minute, as well as though he was at his usual post. Here sickness was not sufficient to overcome a sentient habit and one which could not possibly have any essential connection with the immediate organism of the individual in question. An ex-employee in drawing water in a machine which required 300 turns could not possibly be driven farther than was just adequate to effect that purpose. here as the animal must, from the very nature of Things, have been devoid of the power to count or by any means to calculate the number of rounds, did exist an organic impression - the force of reiterated habit - the nature of which a mere -

type in Physiology will not pretend to decide on.

Mr Lewis A Ford a wealthy farmer in Southampton Virginia, has, at this time a mule that was employed several years in a cotton gin &c during this time he became blind but would before, and will since his blindness when turned in the field perform in an equal space his diurnal revolutions. Here the great changes which his blindness must have occasioned could not subdue habit or in other words, make an impression which could overcome the existing one.

Good in his observations, on indigestion has these words "one substantial meal of solid animal food daily is sufficient for a man in full health engaged in a life of ordinary labor - yet there are many who without any labor and from a long habit are obliged to take three ~~or~~ four, but the habit is a bad one and cannot be too soon broken down." It follows therefore, of necessity, that where the stomach is weak the task of digesting one full meal of animal food is the most that should be put upon it. Here we see that the stomach requires

16
rest, and that it should not, as by the constant ad-
ministration of food, be disturbed in its operation.

But, I have said enough on this subject and only
regret that I have not been able to treat it with
the justice which its importance demands, but must
be content with the thought of having done my best. -

Vol 45 Theses

1820 - 1829

